

## Glossary

**4-inch, single-stage, 350-GPM pump** *See* 350-GPM transfer pump.

**4-ton bolster trailer** A dual-axle trailer, with 4 bolster attachments and an adjustable tow boom, used for transporting pipe from the construction staging areas to the construction site.

**5-mile pipeline set** Consists of the pipes, valves, elbows, anchors, couplings, gaskets, and other materials needed to build 5 miles of pipeline.

**5-ton cargo long bed** A truck that is the primary vehicle for construction of military pipelines; the truck is used to pull the 4-ton bolster trailer, transport the pipe to the construction site, and haul equipment and soldiers to and from the construction site.

**6-inch, bolt-on-type, hose-to-cam-lock, male and female adapter** Device that is installed on the ends of the 6-inch hose-and-reel kit.

**6-inch, cam-lock, female-by-double-grooved adapter** Device that is connected to the cam-lock gate valve on the discharge line leading to the 210,000-gallon, collapsible fabric tank.

**6-inch, cam-lock, male-by-double-grooved adapter** Device that is connected to the hose that goes to the elbow coupler on the tank inlet.

**7 1/2-ton crane** Used for lifting and placing scraper-receiver assembly, strainer assembly, launcher assembly, and valves along the pipeline and at pumping-station locations.

**12-foot, noncollapsible, discharge, 4-inch hose** Used in the contaminated-fuel module and the 50,000-gallon, TPT, optional-tank configuration.

**12-foot, noncollapsible, suction, 6-inch hose** Used in the tank-farm assembly and tanker-truck receipt manifold.

**12-foot, suction, 4-inch hose assembly** Used in the tanker-truck receipt manifold; contaminated-fuel module; and the 50,000-gallon, TPT, optional-tank configuration.

**40-ton crane** Used for lifting and placing mainline pumps at construction staging areas and at pumping-station locations.

**50- and 500-foot, lightweight, collapsible, discharge, 6-inch hose** Used in the tank-farm assembly, contaminated-fuel module, tanker-truck receipt manifold, switching manifold, and fuel-dispensing assembly.

**350-GPM transfer pump** An air-cooled, 3-cylinder diesel engine and a self-priming centrifugal pump mounted on a 2-wheel frame assembly; this pump is used as part of the contaminated-fuel module to load a tanker-truck with off-specification fuel for disposal or blending. *See also* 600-GPM hose-line pump; 800-GPM mainline pump; 1,250-GPM hose-line pump; centrifugal pump; flood-and-transfer pump.

**600-foot, 6-inch hose-reel assembly** Consists of 600 feet of 6-inch lightweight hose packaged on reels; MAWP is 150 psi.

**600-GPM hose-line pump** A wheel-mounted, variable-speed, self-priming centrifugal pump with manual and automatic controls and a turbocharged, air-cooled, 6-cylinder diesel engine; this pump is a component of the tank-farm assembly. *See also* 350-GPM transfer pump; 800-GPM mainline pump; 1,250-GPM hose-line pump; centrifugal pump; flood-and-transfer pump.

**800-GPM mainline pump** A skid-mounted, diesel-engine-driven, centrifugal, 3-stage, high-pressure pump with an output of 800 GPM at 1,800 feet of head; this pump is used as a booster pump on the IPDS pipeline. *See also* 350-GPM transfer pump; 600-GPM hose-line pump; 1,250-GPM hose-line pump; centrifugal pump; flood-and-transfer pump.

**1,250-GPM hose-line pump** A skid-mounted, 6-cylinder, single-stage, turbocharged, diesel engine; this pump is in the IPDS and is used for flood, transfer, and general utility service. *See also 350-GPM transfer pump; 600-GPM hose-line pump; 800-GPM mainline pump; centrifugal pump; flood-and-transfer pump.*

**6,000- and 10,000-pound rough-terrain forklift** Used to load and unload pipeline components at construction staging areas along the pipeline trace.

**AFCS** Army Facilities Components System; consists of the TMs that make up a system for rapidly determining the Class IV materials, layout, and construction effort required.

**AFFF** aqueous film-forming foam

**AL** Alabama

**anchor** A screw-type anchor, 1 1/2-inch square steel shaft 5 feet long with a 6-inch tapered helix welded to the bottom; the anchor is used to secure the pipeline to the ground.

**anchor clamp** A two-piece steel clamp used to secure the pipe to the anchor.

**ANSI** American National Standards Institute

**API** American Petroleum Institute

**API gravity** Scale, used by the petroleum industry, that is based on reciprocals of specific gravities and, therefore, produces whole numbers having a greater numerical spread.

**AR** Army regulation

**Army Facilities Component System** *See AFCS*

**atmospheric pressure** Comparable to static pressure in liquids because it is caused by the weight of air above the earth's surface.

**ATTN** attention

**AVGAS** aviation gasoline

**AVLUB** aviation lubricant

**ball valve** Valve used in switching manifolds to regulate the fuel flow. *See also check valve; gate valve; nonrising-stem valve; plug valve; pressure-control valve; pressure-reducing*

*valve; pressure-regulating valve; rising-stem valve; thermal-relief valve.*

**barrel** *See bbl.*

**base terminal** *See pumping station 1*

**batching** Determining the sequence in which two or more products are to be pumped; introducing products into the pipeline in a sequence that results in the least formation of interfacial material.

**bbl** barrel(s); a common unit of measurement of liquids in the petroleum industry; one barrel equals 42 US gallons.

**beach interface** Valves and fittings needed to connect the IPDS to the OPDS.

**Bernoulli equation** An equation that expresses the energy relationship for a liquid flowing through a pipe between two points.

**BFTA** bulk-fuel tank assembly; a 210,000-gallon tank that is primarily used for initial storage at beachheads as an integral part of the TPT tank-farm complex.

**blank flange** A flange used to close the end of a pipe or to close a pipeline to produce a dead end; a blank flange is used to ensure that there will be no movement of product. A blind flange is not the same as a blank flange.

**bolted coupling** Standard, split-ring, groove-type coupling used in the steel pipeline system; this coupling provides a sufficient amount of angular deflection and slack adjustment for expansion and contraction of the line between adjacent joints.

**BPH** barrel(s) per hour

**buffer** An object (such as a hydrocarbon product) used to separate two batches in a pipeline.

**bulk-fuel tank assembly** *See BFTA*

**bulk-petroleum distribution system** The network that gets bulk fuel to using units; the system can consist of ocean-tanker loading and unloading facilities, storage terminals, pump stations, pipelines, hose lines, tank vehicles, and rail tank cars.

**cam lock** A quick-connect fitting found on valves and hoses in the TPT and low-pressure areas of pump stations.

**cam-lock coupling** Low-pressure, quick-disconnect coupling used on some components of the TPT and for drains in the pumping stations. *See also* **double-grooved coupling**; **single-grooved coupling**.

**capacity** Quantity of fuel pumped per unit of time, expressed in BPH or GPM. Also called **throughput**.

**cathodic protection** The measures taken to stop the flow of direct electrical currents from the pipeline to and through the soil in which it is buried.

**cavitation** Formation of a cavity or partial vacuum around a fan, propeller, or impeller that is revolving above a certain critical speed causing a loss of efficiency.

**centipoise** Unit of viscosity equal to 1/100 poise.

**centistoke** Unit of kinematic viscosity equal to 1/100 stoke.

**centrifugal pump** Consists of one or more impellers mounted on a rapidly rotating shaft; the liquid enters the impeller at the center (eye) and is impelled outward from the center by centrifugal force at high velocity into the volute of the pump casing. The function of the volute is to catch the impeller discharge and convert peripheral (tangential) velocity head into pressure head while conducting the liquid at a reducing rate of flow to the discharge nozzle of the pump casing. *See also* **350-GPM transfer pump**; **600-GPM hose-line pump**; **800-GPM mainline pump**; **1,250-GPM hose-line pump**; **flood-and-transfer pump**.

**cfm** cubic foot (feet) per minute

**change in length ((delta) L)** Reflects change in aluminum pipe length due to thermal expansion.

**check valve** A one-way (nonreturn) valve whereby fluids pass in one direction only; the valve closes when the pressure causing flow stops or back pressure closes the valve. *See also* **ball valve**; **gate valve**; **nonrising-stem valve**; **plug valve**; **pressure-control valve**; **pressure-reducing valve**; **pressure-regulating valve**; **rising-stem valve**; **thermal-relief valve**.

**CIMIC** civil military cooperation; agreement between a host nation and the US military for the host nation to provide facilities, food, services, and labor.

**civil military cooperation** *See* **CIMIC**

**cold bend** Steel pipe-bending method; a pipe joint is pulled until stressed beyond the yield point of the material, thus causing a permanent set.

**collapsible, dispensing, 1-, 1 1/2-, 2-, and 4-inch hose** Used in the fuel-dispensing assembly and the 50,000-gallon, TPT, optional-tank configuration; this hose is available in various lengths.

**COMMZ** communications zone

**contaminated-fuel module** A module consisting of two 50,000-gallon, collapsible, fabric tanks used to hold fuel that is contaminated or off-specifications until it can be disposed of or blended.

**contamination** The addition to a petroleum product of some material not normally present. Common contaminants are water, dirt, sand, mill scale, and other petroleum products.

**CONUS** continental United States

**coupling** A clamp used to connect two pieces of pipe, hose, valves, or fittings.

**critical gap-crossing set** Prepackaged gap-crossing material consisting of 4-inch steel pipe, cross-braces and roller assemblies to cross a total of 250 feet of gap.

**culvert pipe** Standard, nestable, steel-corrugated pipe used for protecting pipelines located under roadways to minimize damage from the weight of passing vehicles.

**cut-and-groove machine** A portable pipe cutting-and-grooving machine used to prepare ends of IPDS pipe and piping components; this machine can cut aluminum and steel pipe to desired lengths and simultaneously cut single or double grooves.

**DA** Department of the Army

**Darcy-Weisbach equation** Used to calculate friction head loss in a pipeline.

**deadweight tester** Used to calibrate gauges, verify set points of spring-loaded relief valves, and provide precise pressure readings for pipelines.

**Defense Fuel Supply Center** *See* **DFSC**.

**Defense Logistics Agency** *See* DLA.

**design fuel** Fuel type for which a pipeline system is designed; military pipelines most likely will transport diesel and jet fuels and kerosene.

**DFSC** Defense Fuel Supply Center; procures and arranges for delivery of bulk-petroleum products to the military services; DFSC contracts with a commercial supplier in CONUS or overseas and ensures that required fuel is shipped to the theater.

**differential pressure** The difference between suction pressure and discharge pressure of a pump; increment of pressure added by each pump operating in series in pumping stations; pressure drop or loss between inlet and outlet of a filter, meter, or other accessory offering resistance to flow.

**discharge side** Downstream or outlet side of a pump having the discharge pressure of the product.

**ditching** Preparing the bottom for a river crossing.

**DLA** Defense Logistics Agency; is responsible for the integrated management of bulk petroleum; DLA works through the DFSC.

**DOD** Department of Defense

**double-grooved coupling** Low-pressure coupling used in the TPT. *See also* **cam-lock coupling**; **single-grooved coupling**.

**downstream** The direction of pipeline flow.

**drum, collapsible** A 500-gallon, fabric drum. (All other sizes of liquid fuel collapsible containers are considered tanks not drums.)

**DS** direct support

**dynamic head** A measure of pressure, or kinetic energy, of liquids in motion.

**earthwork** Tank berms, tank pads, roads, and culverts at a TPT location.

**elbow** An *L*-shaped pipe fitting used to form an angle between adjacent pipes; the angles are 6, 11 1/4, 22 1/2, 45, and 90 degrees for aluminum fittings and 45 and 90 degrees for steel fittings.

**ENCOM** engineer command; provides construction support for the petroleum facilities that are required to accomplish the theater

support mission; ENCOM plans and supervises construction or renovation of ports, roads, railways, petroleum pipelines, and petroleum-storage facilities in support of the bulk-fuel distribution system; units assigned to the ENCOM are the engineer construction group, combat heavy engineer battalion, engineer pipeline construction support company, and engineer port construction company.

**engineer command** *See* ENCOM

**EOL** end of line

**expansion device** Expansion/contraction devices used to take up pipeline movement caused by thermal expansion; the two types of devices used in the IPDS are *U*-loops and *Z*-loops.

**filter-separator** A device used to separate solid contaminants and water from a petroleum fuel.

**flood-and-transfer pump** Pumps generally installed to supply the required suction pressure between tank-farm installations and mainline (trunk line) pumping stations or to feed fuel through short branch lines to dispensing installations. *See also* **350-GPM transfer pump**; **600-GPM hose-line pump**; **800-GPM mainline pump**; **1,250-GPM hose-line pump**; **centrifugal pump**.

**floodlight sets** A 6,000-watt floodlight set consisting of a trailer-mounted, 6-kilowatt diesel generator; 30-foot expanding mast with four 1,000-watt bulbs; and two portable 12-foot masts with two 500-watt bulbs each.

**flow resistance** In a pipeline, fuel resists flow because of friction of the pipe walls, viscosity of the liquid, and other factors such as entrance to the pipe, sudden changes in flow direction, or resistance of valves and fittings.

**FM** field manual

**FORSCOM** United States Army Forces Command

**friction loss** Loss of pressure, in terms of feet of head per unit of pipe length, from internal resistance to flow in the product itself (viscosity) and from resistance offered by pipe walls, pipe fittings, and reductions in pipe diameter.

**FSSP** fuel-system supply points

**ft** foot (feet)

**fuel unit** Consists of three tank-farm assemblies; there are three fuel units in a TPT to allow the TPT to receive, store, and issue three types of fuel.

**fuel-dispensing assembly** An assembly of three 350 filter separators, valves, and hose lines used to dispense fuel from a TPT fuel-storage unit to bulk-petroleum transport.

**fuel-sampling assembly** A pipe section with grooved ends that consists of a 1/2-inch ball valve, 1/2-inch needle valve, goose-neck spigot, and a catch basin; this assembly is located in each TPT, upstream from the switching manifold and, where required, along the pipeline to allow periodic sampling for determining batch separation and quality control.

**GAA** general agency agreement

**gate valve** Valve with a gate that is opened or closed to control fuel flow; the locations for a gate valve are at one-mile intervals, at the bottom of hills (low points), and before and after critical gap crossings; this valve is used to stop flow at the tank or in the pipeline. A gate valve is either a rising-stem or nonrising-stem type. *See also* ball valve; check valve; nonrising-stem valve; plug valve; pressure-control valve; pressure-reducing valve; pressure-regulating valve; rising-stem valve; thermal-relief valve.

**general mechanic's automotive set** Contains an ordnance item of issue and is used mainly for minor maintenance or replacement of external accessories of pumping unit engines.

**go-devil** *See* scraper.

**GPM** gallons per minute

**GR** gross requirement

**GS** general support

**head capacity (normal)** The total head against which it will pump at the most efficient operating point. **(emergency)** The total head against which it will pump to provide maximum pipeline capacity.

**head terminals** May be located in the main supply areas of an independent corps.

**HEMTT** heavy expanded mobility tactical truck

**hose-line assembly** A petroleum hose-line system composed of hoses, valves, and fittings that can be readily installed to connect the major components within a TPT; there are three hose-line assemblies per TPT.

**hose-reel assembly** A component of the transfer hose-line assembly; the system consists of a frame, two reels, a hydraulic cylinder, a hydraulic motor, two brake systems, two 600-foot base sections, and a power pack. Hoses must be cut to desired lengths and fittings bolted on before use.

**HQ** headquarters

**hydraulic drive head** This head is used to auger anchors into the ground; it may be mounted on the bucket arm of the JD410 backhoe or the SEE.

**hydraulic gradient triangle** A right triangle that is constructed on the same scale as the profile; the altitude (vertical distance) represents the available feet of head pressure at the discharge of the pumping station, the base (horizontal distance) represents the distance that the fluid can be moved on level terrain, and the hypotenuse is the hydraulic gradient.

**hydrometer** A graduated instrument used to determine the specific gravity of liquids; it is usually made of hallow glass and weighted at one end so it will float upright. A liquid's density will determine the depth to which an instrument will sink in that liquid: the lighter the liquid, the lower the instrument sinks. Some hydrometers are marked so that the percentage of each constituent of the product in them can be read. Hydrometers used to measure petroleum are usually marked with degrees API.

**hydrostatic pressure** Pressure due only to the weight of the liquid itself; hydrostatic pressure goes from zero at the top of a column of liquid to a maximum at the bottom of the column.

**ID** inside diameter

**impeller** A device that impels or pushes forward, such as the rotor of a centrifugal pump or air compressor.

**in** inch(es)

**Inland Petroleum Distribution System** *See* IPDS

**interface** A mixture, or commingling, between adjacent products in a multiproduct pipeline; interfacial mixture.

**intermediate terminals** Serve as reserve-storage installations and as dispensing installations.

**IPDS** Inland Petroleum Distribution System; a rapidly deployed petroleum system consisting of aluminum pipe, pumping stations, and TPTs for use in contingency operations; an IPDS is composed of modules to provide required configurations for preplanned or emergency deployment.

**ISO** International Standards Organization

**jackrabbit start** Incorrectly starting a vehicle, causing the load to slide off the rear of the vehicle.

**joint petroleum office** *See* JPO

**JP** jet petroleum

**JPO** Joint Petroleum Office; established by the Joint Chiefs of Staff to provide staff management of petroleum at the theater level on the staff of the unified commander; the JPO submits monthly petroleum requirements of all the military services in the theater to the DFSC.

**launcher assembly** A skid-mounted assembly located at the discharge side of each pumping station used to launch a pipeline scraper from one pumping station to the next.

**lizard** *See* traveling shield

**lb** pound(s)

**LOG** logistics

**mainline pump-station set** Consists of the pumps, valves, valve launchers, receivers, strainers, light sets, and pump shelters needed to construct a standard, mainline pumping station.

**MAWP** maximum allowable working pressure.  
*See also* working pressure.

**meter strainer** A skid-mounted device that measures the quantity and flow rate of fuel moving into and out of the TPT; the strainer protects the meter.

**METT-T** mission, enemy, terrain, troops, and time available

**MIL-STD** military-standard

**modular design** A simplified graphical method of locating pumping stations (except station 1) and pressure-reducing stations.

**MO** Missouri

**MOGAS** motor gasoline

**MSC** military sealift command

**MSR** main supply route

**MTOE** modification table of organization and equipment

**NATO** North Atlantic Treaty Organization

**NCOIC** noncommissioned officer in charge

**No.** number

**nonrising-stem valve** The lower end of the stem on this valve is threaded, and it screws into the disk; the disk moves up or down while a thrust collar keeps the stem in place. *See also* ball valve; check valve; gate valve; plug valve; pressure-control valve; pressure-reducing valve; pressure-regulating valve; pressure-relief valve; rising-stem valve; thermal-relief valve.

**OD** outside diameter

**Offshore Petroleum Discharge System** *See* OPDS

**OIC** officer in charge

**OPLAN** operations plan

**OPDS** Offshore Petroleum Distribution System; a Navy system that uses a ship, which is anchored up to 4 miles offshore, and underwater hose lines to off-load commercial tankers and deliver fuel to the high-water mark in an undeveloped theater.

**overcoupling clamp** A clamp in two halves used to enclose a leading coupling.

**P/L** petroleum/lubricant

**petroleum terminal** Made up of a single tank farm or a complex of dispersed tank farms with varying capacities.

**packed line** A petroleum pipeline or hose line filled with product under pressure.

**pig** *See* scraper.

**pig walkers** crew members.

**pipe-fitter's general tool kit** Contains a variety of hand tools needed for all types of pipe fitting to work on 1/8- to 2-inch pipe.

**pipe-fitter's supplemental tool kit** Contains a minimum of hand tools required for cutting, threading, and fitting the 2 1/2- to 4-inch pipe; supplements the pipe-fitter's general tool kit.

**pipe fittings** Standard, groove-type fittings that include elbows, *Ts*, reducers, blank ends, and adapters.

**pipeline-construction, grooved-coupling, steel-tubing set** Contains the tools and equipment needed to construct and maintain steel-coupled-type pipelines and pumping-station manifolds.

**pipeline strainer assembly** Consists of skid-mounted dual strainers and associated valves and piping; assembly is supplied with the IPDS for installation in the pipeline pumping stations upstream of the pumps.

**pipeline suspension-bridge set** Consists of towers, guy wires, deadman anchors, cables, suspenders, and other materials needed to construct a bridge; assemblies are available in 100-, 200-, and 400-foot kits.

**pipeline valves** These valves cut off, control, and direct the fuel flow in a pipeline.

**pipeline vent assembly** A 1-foot-long section of steel pipe with a 3/4-inch weldolet coupling and a 3/4-inch ball valve, fittings, and nipple; vent assemblies are installed at high points to vent air from the pipeline.

**pipe saw** A reciprocating-type saw powered by an air motor that can cut steel, cast iron, and stainless or alloy steel pipe; this saw has an 8-inch capacity for hazardous locations.

**pit-leak clamp** Used to stop a small hole caused by corrosion or other damage. *See also* repair clamp; split-leak clamp.

**plot plan** A dimensional layout of major equipment involved in a system.

**plug valve** Valve that has a revolving plug with an opening so that fuel flows when the opening is aligned with the pipe; used in a tank-farm manifold and on launchers and receivers where quick and positive closing of the valves is essential. *See also* ball valve; check valve; gate valve; nonrising-stem valve; pressure-control valve; pressure-reducing valve; pressure-regulating valve; rising-stem valve; thermal-relief valve.

**POL** petroleum, oils, and lubricants

**pressure-control valve (5 psi)** A 1 1/2-inch pressure-control valve used in the fuel-dispensing assembly when filling nonvented, 500-gallon, collapsible drums; limits the flow pressure to 5 psi. **(30 psi)** A skid-mounted, 6-inch back-pressure relief/regulator valve installed in the recirculating hose line from the fuel-dispensing assembly to tankage to maintain dispensing pressure of 30 psi. *See also* ball valve; check valve; gate valve; nonrising-stem valve; plug valve; pressure-reducing valve; pressure-regulating valve; pressure-relief valve; rising-stem valve; thermal-relief valve.

**pressure-regulating valve** A steel, skid-mounted, dual-control, 4-inch valve used to regulate pressure of fuel entering a TPT and to maintain an upstream pressure above a set point (50 psi) and a downstream pressure below a set point (125 psi). *See also* ball valve; check valve; gate valve; nonrising-stem valve; plug valve; pressure-control valve; pressure-reducing valve; rising-stem valve; thermal-relief valve.

**product control** Those actions necessary to control and safeguard products in TPT storage or flowing through the pipeline; product control includes pumping orders, flow schedules, supply control and accounting, quality surveillance, and monitoring the integration of the system.

**psi** pound(s) per square inch

**psig** pound(s) per square inch gauge

**pumping station** An area that has two 800-GPM mainline pumps; a launcher, receiver, and strainer assembly; and associated pipe, valves, and fittings that are used to boost the pressure of fluid flowing through the pipeline.

**pumping station 1** The station that receives fuel from a petroleum-terminal tank farm or host-nation supply. Also called **base terminal**.

**pup joint** A 9 1/2-foot-long pipe section with a constant wall thickness of 0.4 inch; this joint is used to make short pieces of pipe or nipples, which can be cut and regrooved, that are used to close gaps less than 19 feet.

**quality surveillance** Measures taken to ensure that petroleum products, which the government has accepted as being of the required quality, are still of the required quality when delivered to the user; quality surveillance includes watching over and caring for products during all storage and handling operations, adhering to handling methods and procedures designed to protect quality, and examining and testing products in storage and on change of custody.

**receiver assembly** A skid-mounted assembly located on the incoming side of each pumping station and at end-of-line used to receive a pipeline scraper launched from the preceding pumping station.

**reducer** A coupling that has one end larger than the other; a reducer is used to connect pipes or pipes and other fittings of different diameters.

**repair clamp** A clamp supplied in one of three types for the temporary repair of leaking pipes or couplings. *See also* **pit-leak clamp; split-leak clamp**.

**reverse polarity** Positive electrode and negative work; recommended use in welding when using shielded arc electrodes.

**Reynold's number** An equation used to determine the friction factor required in the Darcy-Weisbach equation.

**rising-stem valve** A type of gate valve in which the valve stem and disk rise together when the valve is opened. *See also* **ball valve; check valve; gate valve; nonrising-stem valve; plug valve; pressure-control valve; pressure-reducing valve; pressure-regulating valve; thermal-relief valve**.

**RPM** revolutions per minute

**S&I** standardization & interoperability

**S&P** stake and platform

**S3** Operations and Training Officer (US Army) (S3)

**SALMS** Single-Anchor Leg-Mooring System

**SB** supply bulletin

**scraper** A device propelled by the moving stream in a pipeline used to scrape out or dislodge wax, corrosion, sediment, air, or other deposits that tend to increase friction loss, reduce throughput, or lead to contamination of product; scrapers are dispatched from a launcher and received in a receiver. The outgoing barrel is on the discharge side of a pumping station; the incoming barrel is on the suction side. Also called **pig; go-devil**.

**sec** second(s)

**sediment** Foreign matter other than water that settles to the bottom of a container.

**SEE** small emplacement excavator; used to install pipeline anchors, dig and back fill culverts, and load and unload gate and check valves.

**settling time** The elapsed time that a product remains undisturbed or unagitated between receipt of product into and discharge from storage.

**SG** specific gravity; physical property of liquids; SG is the ratio of the weight of a volume of liquid to the weight of an equal volume of water.

**single-grooved coupling** High-pressure coupling used in the IPDS pipeline and pumping stations; an IPDS single-groove coupling gasket is not interchangeable with double-grooved or victaulic single-grooved gasket. *See also* **cam-lock coupling; double-grooved coupling**.

**slack line** A pipeline that has been shut down without pressure; static pressure is caused by differences in elevation along the profile.

**small emplacement excavator** *See* **SEE**

**specific gravity** *See* **SG**

**split-leak clamp** Consists of stirrups, a saddle, and a gasket to be fitted around the pipe at a fault. *See also* **pit-leak clamp; repair clamp**.

**STANAG** standardization agreement



**standby** A term for equipment used only in emergencies or, in the case of pumping units in a pumping station, on a rotational basis for uniformity of wear and for maintenance purposes.

**static head** Hydrostatic pressure produced with a column of liquid at rest.

**station on a downgrade** A downstream pumping station that is at a lower elevation than the preceding station.

**station on an upgrade** A downstream pumping station that is at a higher elevation than the preceding station.

**std** standard

**strainer assembly** Skid-mounted assembly on the suction side of pumping stations used to filter particles out of the product being pumped, thus protecting the pumps; an assembly has two strainers so one can be bypassed and cleaned without interrupting the flow.

**stringing** Off-loading and placing pipe sections along the pipeline route end to end.

**suction pressure** Pressure on the inlet or suction side of the pump.

**supplemental pipeline pumping-station set** Contains all the tools required for operator maintenance and repair of the standard pumping units and the 4-, 6-, and 8-inch pumping-station manifolds; supplements the general mechanic's tool set.

**suspension bridge** Precut and prepackaged bridges available in 100-, 200-, and 400-foot sizes; the bridges are part of IPDS material for laying pipeline across streams and ravines.

**switching manifold** The nerve center of a TPT that allows fuel to be received from the pipeline or tanker-truck receipt manifold and moved into any of fuel units or between fuel units back into the pipeline.

**tactical petroleum terminal** *See* TPT.

**TAMMC** Theater Army Material Management Center; is the theater petroleum item manager for bulk-petroleum products; TAMMC records consumption data, coordinates with the petroleum group to program future

requirements, and submits petroleum requirements for the theater to the JPO.

**tank** A 210,000-gallon, collapsible, fabric tank, in the IPDS, for storage of petroleum products; there are two tanks per tank-farm assembly, with three tank-farm assemblies per fuel unit and three fuel units per TPT.

**tank-farm assembly** The basic storage unit in a TPT consisting of two 210,000-gallon, collapsible, fabric tanks; one 600-GPM hose-line pump; and associated hose, valves, and fittings. Three tank-farm assemblies make one fuel unit.

**tanker-truck receipt manifold** The hoses, valves, and fittings necessary to give a TPT the capability of receiving products from tanker trucks; there are three manifolds per TPT, one for each fuel unit.

**tapping machine** A lightweight drilling machine with an adjustable, automatic feed rate used to tap into a pressurized pipeline to drain for pipe or coupling replacement.

**temperature** A physical property of liquids that affects viscosity, density, specific gravity, and other physical properties; all measurements are corrected to 60°F.

**terminal** A bulk facility for receipt, storage, transportation, and issue of petroleum products; the facility may be a base terminal for receipt and shipment of product by tanker, a pipe-head terminal (head terminal) at the downstream end of the pipeline, or an intermediate terminal on the pipeline. The terminal consists of a tank farm or tank-farm complex, tank-farm manifold, and central pumping-station area.

**theater army** Provides broad planning guidance for Army petroleum support, supervises current operations, and conducts long-range planning.

**Theater Army Material Management Center**  
*See* TAMMC

**thermal-relief valve** An automatic valve used to release pressure above a given setting; valves are set 10 percent above the maximum pipeline pressure. *See also* ball valve; check valve; gate valve; nonrising-stem valve; plug valve; pressure-control valve; pressure-reducing valve; pressure-regulating valve; rising-stem valve.

**throughput** *See* capacity

**tie-ins** Welding unconnected sections together.

**TM** technical manual

**TO** theater of operations

**TOE** table(s) of organization and equipment

**TPT** tactical petroleum terminal; a fuel-handling system designed to receive, store, and issue bulk-petroleum fuels, specifically diesel and jet fuels, from the pipeline or tanker trucks to bulk-petroleum vehicles or 500-gallon collapsible drums; a TPT consists of nine tank-farm assemblies (two 210,000-gallon tanks each) in three fuel units, allowing storage of three separate products.

**TPT set** Eighteen 210,000-gallon fabric tanks and the necessary assemblies to receive and issue fuel at the retail level.

**TRADOC** United States Army Training and Doctrine Command

**traveling shield** Device that is pulled ahead of the backfilling machine to absorb the impact of the earth being placed in the trench over the pipe. Also called **lizard**.

**twin agent unit** A trailer-mounted fire extinguisher using dry chemical and AFFF to suppress petroleum fires in a TPT.

**U-loops** *See* expansion devices.

**upstream** Opposite to the direction of pipeline flow, which is downstream.

**US** United States (of America)

**USAEDH** United States Army Engineer Division, Huntsville

**valve** A device used to control flow of fluids and regulate the flow of gases, liquids, or loose materials through structures, such as piping or hose lines, by opening and closing or by obstructing ports or passageways.

**vapor pressure** A function of the temperature and pressure of the system.

**viscosity** Physical property of liquids; viscosity is a measure of the flow of a liquid; it is the internal force (resistance) or opposition to flow.

**w/** with

**weight density** Physical property of liquids; density is a measure of the concentration of matter; weight is a measure of the force of gravity; weight density is the weight per unit of volume.

**welded pipeline construction set (4-, 6-, and 8-inch size)** Contains the special size equipment in the correct quantities required for handling the three pipe sizes, stringing pipe sections, and laying and welding the pipeline. **(12-inch size)** Contains the special size equipment in correct quantities needed for handling, stringing, laying, aligning, and beveling 12-inch pipe.

**welder's supplemental pipeline construction set** Contains the tools and equipment required for welded pipeline construction that are not in the oxyacetylene torch outfit, cutting-and-welding equipment set.

**working pressure** The maximum allowable pressure at which a system or piece of equipment is designed to operate safely; the IPDS pipeline and pumping stations have a MAWP of 740 psi; the TPT has a MAWP of 150 psi.

**wrinkle bend** Pipe-bending method; an accurately controlled bend can be made using an acetylene torch to heat the pipe (not tubing) to produce an area of relative weakness that will produce an outwardly projecting wrinkle in the bent portion of the pipe.

**Z-loops** *See* expansion devices